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The credit derivatives market – a threat to financial stability?

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Abstract

Credit derivatives occurred as a solution to the needs of managing credit risks by the financial institutions, mainly banks. Besides the role of means of hedging and diversifying credit risks, derivatives become tempting for those likely to take on *more* risk to make more money. Therefore, the users of credit derivatives for protective purposes were outnumbered by the speculative ones. The result consisted in an ever-growing OTC market, with huge volumes traded. The players achieved very high leverage on increased credit exposures, without being suspected by creditors or regulators of inconsistency. The very first signs of the current global crisis revealed the weaknesses of the relations and dependencies developed on the credit derivatives markets, as big players on these markets have failed. This paper considers the benefits of credit derivatives for risk management, along with the perils they pose for systemic risk. Finally, the paper outlines the actions that should be undertaken in order to strengthen the operational efficiency of credit derivatives markets so as to ensure that they do not harm financial stability.

Keywords: Credit derivatives, Credit default swaps, Financial stability

1. Introduction

Derivatives markets have come under the spotlight in the current global financial and economic crisis, in a different way than we were used to see them. If they had been a long time in financial news headlines as they were considered a real success in financial risk management, recent years have transformed them in the black spot of the financial markets. The last years revealed ironically a situation: financial instruments designed to reduce risk, would backfire so much.

Derivatives revolutionized the financial markets, offering in the 1970s the way to face the new problems occurred by the increased volatility of the markets, by the oil shock, by the high inflation etc. From the first goal, to reduce risks and to insure business more effectively, they become tempting for those likely to take on more risk to make more money. The new conceived instruments added new sides and butts, like to cover against loss of value of securities held in portfolios or, more recently, to ensure against whether someone will default or not.

Credit derivatives are a class of privately negotiated contracts designed with the express purpose of transferring credit risk from one party to another. They are financial instruments whose payoffs are linked in some way to a change in credit quality of an issuer or issuers. There are two major categories of credit derivatives: collateralized debt obligations (CDOs) and credit default swaps (CDSs). A CDO is seen like "a pool" of debt contracts housed within a

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special purpose entity whose capital structure is sliced and resold based on differences in credit quality. Banks typically create "structured" products often referred to as CDOs, in order to mitigate credit risks. The first step is to form diversified portfolios of mortgages and other types of loans, corporate bonds, and other assets like credit card receivables. The next step is to slice these portfolios into different tranches. Buyers of these tranches or regular bonds can also protect themselves by purchasing CDSs, which are contracts insuring against the default of a particular bond or tranche of these portfolios. CDSs are defined as private contracts in which parties bet on a debt issuer's bankruptcy, default, or restructuring.

CDS was launched by JP Morgan in 1997 and become the most widely used type of credit derivative, a really powerful force in the derivative markets. Alan Greenspan, the Federal Reserve chairman at the time, addressing the Bond Market Association in 2006, described this type of derivative as the most important instruments he has seen in decades (Greenspan, 2006). Followed only three years to George Soros's speech, when he named CDS as "truly toxic" securities (Soros, 2009). In the recent crisis, asset securitization, including mortgage backed securities and collateralized debt obligations or CDOs, and credit derivatives played a critical role. Brunnermeier's 2009 study describes the involvement of the derivatives in the liquidity and credit crunch 2007–2008 (Brunnermeier M. K., 2009).

2. Literature Review and Hypotheses

2.1. Credit derivatives – useful tools for risk management

Credit derivatives offer a wide range of benefits for market participants, from the banks that lend to large corporate borrowers, to companies that wish to issue bonds and others. The main reason is that they are finding in credit derivatives a very useful tool for risk management. The usefulness of credit derivatives for risk management is different among the categories of users: banks, financial institutions, other investors.

Banks are facing many types of credit risks due by their credit portfolio including different kinds of loans, from large corporate loans to loans to smaller companies, and counterparty credit risks on over-the-counter (OTC) derivatives. They have used credit derivatives and other means of credit risk transfer, such as securitizations, in order to tailor risk in several areas of their credit portfolio. Banks can transfer the credit risk of a portfolio of exposures to investors via securitization transactions, such as collateralized debt obligations (CDOs). In the same time, they can use CDS to get rid of the credit risk of issuers to whom they have a large exposure.

In banking, CDSs are the result of banking regulations such as Basel Agreement, which states that banks must hold capital based on risk assets they hold. For example, for an asset AAA-rated, bank capital requirement that must hold is significantly lower than for a regular mortgage. Consequently, the CDS became increasingly popular among banks which realized they need to sell traditional assets and buy massive securities such as mortgage-based securities (MBS) which, together with the related CDS, receiving the maximum ratings. Demand for credit default swaps has grown exponentially, but this has to mean better targeting of risk as recent events have shown.

An investment bank can use credit derivatives to manage the risk it incurs when underwriting securities. An underwriter assumes credit risk for the short time between when it takes the risk on its own books and when it sells the risk into the market. By virtue of the credit derivatives, the underwriter is able to hedge some of that credit risk more easily. For example, some special credit derivative instruments appear to have proved useful to underwriters who want to hedge the risk of a residential mortgage loan warehouse. Beginning in mid-2004, dealers began to trade credit default swaps on asset-backed securities, referred to as ABS CDS. In addition to underwriters seeking to hedge warehouse loans, asset managers with a negative view on the housing sector are also natural buyers of credit protection. (Gibson S.M., 2007)

An investor can use credit derivatives to align its credit risk exposure with its desired credit risk profile. Credit derivatives can be more flexible and less expensive than transacting in cash securities. A financial investor, an insurance company for example, owner of a bond portfolio in a particular sector, which develops a negative view on the sector involved, can shift its exposure away by buying credit protection using credit default swaps on the affected sector issuer. The bid-ask spread on credit default swaps is generally lower than the bid-ask spread on corporate bonds. To replace the affected exposures, this investor can sell credit protection on other, or simply sell credit protection on a credit default swap index. A major benefit of credit derivatives is that an investor can use credit

derivatives to take a customized exposure to particular components of credit risk, such as spread risk, default risk, recovery risk, or correlation risk.

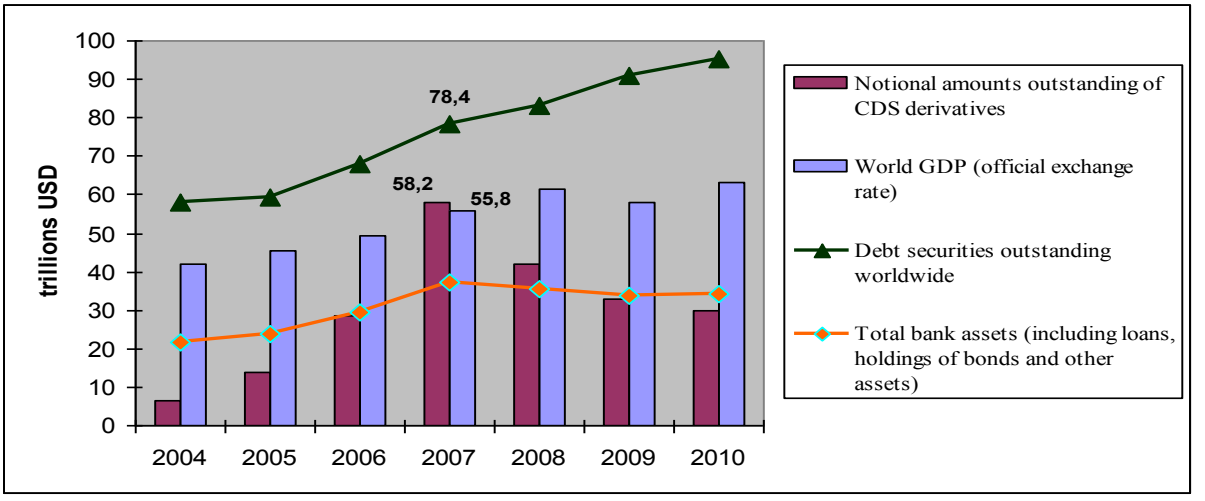
Credit derivatives provide benefits to investors by permitting them to purchase diversified portfolios of fixed income instruments. A CDO is like a firm, in that a manager is empowered by shareholders to engage in certain activities. In this case, the manager selects a portfolio of bonds. As the argument goes, investors benefit from the manager's expertise, and from the fact that they can pool resources with other investors to obtain a divided ownership interest in a diverse portfolio of bonds. A synthetic CDO offers further diversification by enabling investors to invest in a diversified portfolio of credit default swaps. Both of these instruments offer investors a new way of obtaining diversified exposure to fixed income markets. (Partnoy, Frank and Skeel, David A. Jr., 2006)

The users of CDS for protective purposes were outnumbered by the speculative ones, as CDS offers the possibility to speculate on credit quality of certain entities issuing. Speculators bet about the credit quality of a particular reference entity. CDS provide a very efficient way to take a view on the credit of a reference entity. An investor with a positive view on the credit quality of a company can sell protection and collect the payments that go along with it rather than spend a lot of money to load up on the company's bonds. An investor with a negative view of the company's credit can buy protection for a relatively small periodic fee and receive a big payoff if the company defaults on its bonds or has some other credit event. A CDS can also serve as a way to access maturity exposures that would otherwise be unavailable, access credit risk when the supply of bonds is limited, or invest in foreign credits without currency risk. (Investopedia, 2008) Derivatives enjoy widespread use in part because they provide large risk exposure with minimal up-front capital required and minimal disclosure. In other words, they permit very high leverage without tell-tale signs on the balance sheet that would alert creditors or regulators (Simkovic M., 2008).

2.2. The credit derivatives market volumes

In June of 2001, the first time the International Swaps and Derivatives Association (ISDA) conducted surveys of credit derivatives, the outstanding notional amount of credit derivatives was just over 631 billion USD (Lubben S. J., 2007). In the next 6 years the growth of the credit default swaps market was over 100% every year, so in 2007 with 58.2 trillion USD notional amounts outstanding even exceeded the world economic output, which was 55.8 trillion USD.

Given the exponential growth in the CDS market, it is obvious that the speculative function became predominant. At the peak, gross notional amounts outstanding had reached an impressive 58.2 trillion USD, which compares to a notional value of debt securities outstanding worldwide of 78.4 trillion USD at the time. The notional amounts outstanding exceeded in 2007 and 2008 the market value of banks loans, bonds stakes and other types of fixed income securities that could refer to.



Source of data: Bank for International Settlements, www.bis.org

Fig. 1. Credit Default Swaps volumes, comparing with World GDP, Debt securities outstanding worldwide and Total bank assets

While regular insurance policy covers against the risk associated with a good owned by the insured subject, CDS can be purchased even the subject holds or not the debt securities whose risk of default cover it. They will do that expecting to buy cheaper something that will be resold more expensive, betting on growth quotation of CDS. More the risk covered by insurance increases, more these titles are expensive. More specifically, if the borrower is showing signs that could not meet maturing debts in the future, then investors will be more interested to get hold of such insurance policies. How CDS are traded continuously, demand for them will increase, which will make them more expensive. At this point, the CDS owners, that are not bond holders and therefore not interested in the fact itself that issuer go bankrupt, but have anticipated this event and bought CDS, can sell those and obtain gain.

Although major, the decline in this segment of the derivatives market recorded from the onset of the crisis has diminished the notional amount of CDS traded on the OTC markets to the level of 30 trillions USD in December 2010, over the level from 2006. That reveals that many investors are still interested in. CDS gross volumes outstanding fell reflecting to a large extent the multilateral “trade compression”, a practice which reduces gross exposure while leaving the net risk position of a financial institution unchanged. Reduced activity in the market for structured credit, such as synthetic CDOs, and the non-prolongation of terminated contracts also contributed to suppress volumes. (Weistroffer C., 2009)

2.3. Fewer rules on a huge market

CDSs often resemble insurance policies. But, they are essentially different. While insurance companies are required to build up reserves to cover damages to be paid to the buyers of policies when the insured risk occurs, CDS sellers are free to manage risk as they think. In fact, no requirement of establishing a minimum level of reserves to cover the risk assumed is the essence of CDS: credit insurance is designed as a "swap" and not as an "insurance policy", precisely because they are not sellers be forced by law to maintain reserves.

The market for credit default swaps is quite opaque. Because swaps are structured as Over the Counter (OTC) derivatives, they are largely unregulated. Instead of allowing transparent price formation by liberalizing CDS transactions and their performance on the stock exchange, U.S. authorities decided at the beginning that this instrument must be traded only on the market "over-the-counter" (OTC), where each transaction is negotiated separately, the price remains confidential and where there is a small number of participants. In addition, investment banks, major players in the CDS market, they urged that CDS trading to be done OTC, not on exchanges, because of the margin would have been imposed with the scope to cover potential losses. Moreover, if losses are recorded in excess of margin, exchange mechanism would have decided to automatically liquidate the positions of the player in question, and to automatically sell a part of his portfolio. Practically, the margin would be played unite constitute mandatory minimum stocks, a duty which is not very good with the principle of incorporation of CDS. (Glavan B., 2009)

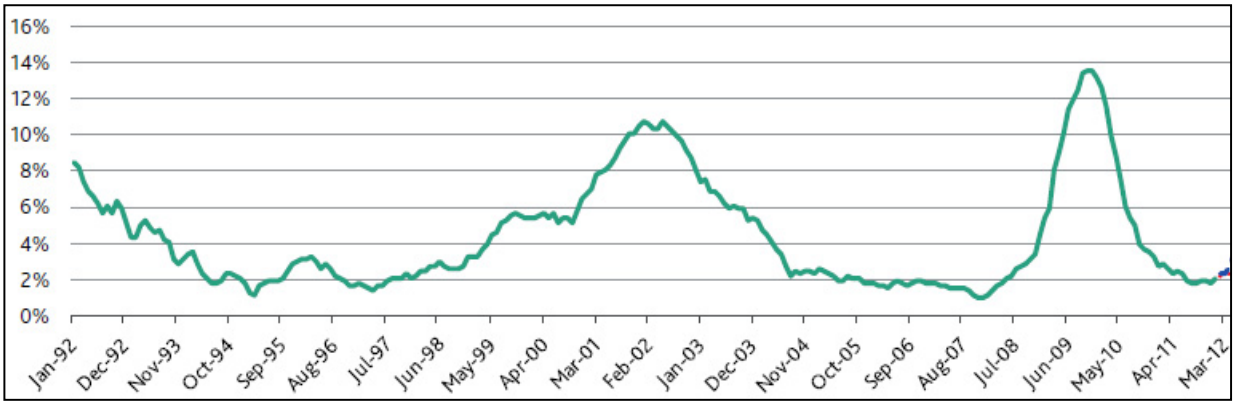
The market for CDSs is OTC and unregulated, and the contracts often get traded so much that it is hard to know who stands at each end of a transaction. Soros explained that going short on bonds by purchasing a CDS contract carried limited risk but almost unlimited profit potential. By contrast, selling CDSs offered limited profit and practically unlimited risk. What's more, the asymmetry between purchasing and selling was reinforced by the fact that CDS were traded and so tended to be priced as warrants, which could be sold at any time, and not as options. (Soros, 2009). There is the possibility that the risk buyer may not have the financial strength to abide by the contract's provisions, making it difficult to value the contracts. The leverage involved in many CDS transactions and the possibility that a widespread downturn in the market could cause massive defaults and challenge the ability of risk buyers to pay their obligations, adds to the uncertainty (Investopedia, 2008). For example, if sellers of credit protection become scarce due to a weaker-than-expected housing market, the ABS CDS markets could see much of their recent liquidity dry up, and underwriters would lose a useful tool for credit risk management.

In theory, the counterparties to a credit default swap make an exchange, along with the credit risk exposure assuming the banks’ monitoring role too. Hedge funds that sell credit protection may emerge, in time, as active monitors of the companies that are the subject of credit contracts. But the pension funds and insurance companies that take on much of the risk are unlikely to provide meaningful monitoring, as they are less skilled and experienced in evaluating credit risk. Overall this suggests that credit default swaps may reduce monitoring oversight, and can lead to

moral hazard on the part of borrowers who are subject to less financial discipline requirements from their lenders. (Partnoy and Skeel, 2006)

The trade in these swaps created a whole web of interlinked dependencies. Derivatives didn't cause the current financial meltdown but they did accelerate it once the subprime mortgage collapsed, because of the interlinked investments (Shah A., 2010). By the issue of CDS is linked the most important de facto bankruptcy recorded in the current crisis, the one of the largest insurance and financial services companies in the world – AIG. The company had credit default swaps of around 440 billion USD at that time (Pittman M., 2008). Furthermore, many of AIGs credit default swaps were on mortgages, which of course went downhill, and so did AIG. As a huge CDS seller, AIG was in the position of guarantor of bank assets and, when the market perceived that AIG is a big problem, banks have made that their assets have become more risky over night. The AIG CDS, draw up to ensure investments and enable banks to avoid increasing equity, were worthless - AIG itself was in danger of bankruptcy. Saving the company was achieved being almost completely nationalized by the U.S. by injecting about 150 billion USD. Saving AIG should be understood not only as a company save, being it number one in insurance field, but as saving bankers too.

One fundamental reality of credit derivatives is that they do not eliminate credit risk. They merely shift it around. As a result, when the credit cycle turns and default rates rise, someone, somewhere, will lose money (Gibson S.M., 2007). Consider Figure 2, which shows global speculative grade default rates since 1992. Clearly, no one should be surprised if when the credit cycle turns, the speculative grade default rate hits 10 percent, which is what it hit in 2002 and in 2009-2010, following the meltdown experienced before.



Source: Moody's Investors Service (2012), *Annual Default Study: Corporate Default and Recovery Rates, 1920-2011,* Exhibit 6

Fig. 2. Speculative grade default rate

In an institutional framework in which other property rights are protected, entrepreneurial activity is diverted from its production purpose, that improve resource allocation, to a political purpose - getting rich by expropriating other. Unfortunately, in the recent crisis a significant portion of such gains were made by using CDS. When this affects financial stability, what just happened in the recent meltdown, it is a matter of major force for the authorities to intervene and strongly regulate the field.

2.4. New regulations on the credit derivatives markets

The global financial crisis onset in 2008 has highlighted that the decentralised nature, combined with the heterogeneity of the instruments traded, naturally makes bilateral OTC markets less transparent than their centralised counterparts. Information on prices and quantities in bilateral OTC markets is much more difficult to come by. Also, in many bilateral OTC markets, market-makers play an important role as intermediaries, profiting from price discrimination among their customers – one possible explanation for the absence of voluntary post-trade price transparency.

In September 2009, G-20 Leaders agreed in Pittsburgh that: "*All standardised OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties*

by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non centrally cleared contracts should be subject to higher capital requirements."

As a result, the regulatory authorities have imposed a paradigm shift policy so far on the derivatives markets and outline a legislative framework (Commission of the European Communities, 2009) that has as effect an increased transparency and placing market participants in the position to assess risks properly. That affects to the same extent CDS market, allowing regulators and supervisors to have full knowledge about the transactions that take place in these derivatives markets, as well as the positions that are building in. Legislators in the US and the European Union are preparing regulatory reform to improve market structure and reduce systemic risk in the OTC derivatives market. The proposed legislation aims to enhance transparency and reduce counterparty risk through the introduction of central counterparties and making central clearing mandatory for CDSs. The current debate focuses on the issues of standardisation of OTC contracts, eligibility for central clearing, and the regulation of central counterparties.

Bilaterally-cleared OTC derivatives have been proved to be very attractive and successful for the market participants. Their growth has exceeded those of exchange-traded central cleared markets over the last 14 years. Even if they were considered safe and stable facing market shocks, the crisis dismantled this myth. The very big failures experienced during the current crisis were caused by the counterparty risk, occured especially in markets where trading is bilateral, with directly negotiated terms, such as CDS derivatives. That is why the OTC bilaterally-cleared markets were revealed being more vulnerable to systemic risk. The lack of formal clearing arrangements has been identified as the main reason such markets did not function properly during the crisis. Consequently, regulators have seek to find solutions and Central Counterparties (CCPs) appear as one of the necessary conditions to improve the resilience of financial markets.

CCPs provide an institutional structure for managing credit risk that has proven successful in exchange-traded derivatives. By mutualisation of losses, CCPs provide credit risk mitigation and mechanisms by which absorb and disseminate the effects of a member's insolvency, keeping other members in health. In addition, CCPs multilateral nettings facilitate the reduction of both counterparty and operational risks. Thus, CCPs are structurally better suited to minimize systemic risk than bilaterally cleared markets.

Clearing of OTC derivatives is concentrated now in a handful of large CCPs, but a number of new CCPs are being proposed to serve smaller or nascent markets (Table 1).

Table 1. Current and prospective CCPs clearing CDS derivatives

Domicile	Clearing service	Products	Status
France	LCH.Clearnet SA	Credit default swaps	Active
Germany	Eurex Clearing	Credit default swaps	Frozen
Japan	JSCC	Credit default swaps	Active
United Kingdom	ICE Clear Europe	Credit default swaps and energy derivatives	Active
United States	CME Group	Interest rate swaps, credit default swaps, and commodity and energy derivatives	Active
	ICE Clear Credit	Credit default swaps	Active

Source: BIS, CGFS (2011), p. 24

The introduction of CCPs alone is not likely to be sufficient to ensure a more transparent and efficient trading process for credit derivatives, in order to make derivatives markets safe, sound and resilient in the face of large shocks. It is important to endeavour to complement the introduction of CCPs with improvements in trading and settlement infrastructure. This includes standardisation as a prerequisite for other tools, the greater use of automated trading, the use of central data repositories for all trades and enhanced risk management and disclosure requirements for market participants themselves.

All these actions should be undertaken in order to strengthen the operational efficiency of derivatives markets so as to ensure that credit derivatives do not harm financial stability and mitigate counterparty risks and promote centralised structures.

3. Methodology

In this paper, the main goal is to identify the role of the credit derivatives markets for the risk management, identifying the harm caused to financial stability by their over use, highlighted by the current financial crisis, and analysis the solutions offered by regulatory authorities to avoid causing further injuries to financial markets by CDS. In order to achieve this goal, the research methodology will be focused both on quantitative as well as on qualitative analysis. The quantitative analysis consider tables and graphs regarding the main indicators of CDS market, as well as global economic and financial indexes, and the qualitative analysis focus on the critical and comparative analysis.

4. Conclusion

The strong growth of the credit derivatives market is largely the consequence of banks and financial institutions' aim to better calibrate credit risk and of traders to gain from exposures to the credit markets. Driving this growth, market participants, including commercial banks, investment banks, and investors, appear to find a variety of credit derivative products to be useful for their own risk management purposes. Prior to the crisis, markets experienced exponential growth in the use of CDSs to hedge and trade credit risk. Although volumes have declined since the 2007 peak, the data shows that CDSs continued to be used widely. I discussed a number of the ways that credit derivatives can be useful for risk management, pointing at the same time that credit derivatives, being poorly regulated have posed some significant challenges to financial stability.

The experience acquired during the crisis revealed many drawbacks of the credit default swaps markets, contributing significantly to a better understanding of them. The initial aim of mitigation individual credit risk of participants conducted to the huge notional volumes outstanding traded and finally have exagerated the credit risk borne by the financial sector as a whole. The systemic risk due to the extensive usage of CDSs seem to have escaped the attention of risk managers and supervisors alike. The lessons learned from the crisis now open up the opportunity of preventing some potential threats of credit derivatives and establishing a more stable system going forward.

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